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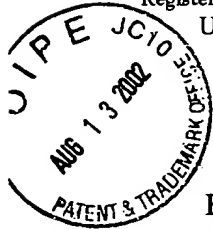
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BOX: NO FEE  
Assistant Commissioner for Patents  
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RE: Patent Application -- SINGLE CAMERA VIDEO INSPECTION  
SYSTEM FOR WATER WELLS AND BORE HOLES

Serial No. 09/259,000

Our File No. 09038.30

Dear Sir:

Enclosed for filing are the following:

1. Original and two copies of Applicant's Reply to the Examiner's Answer; and
2. A self-addressed, stamped postcard which I would appreciate you date-stamping and returning to me upon receipt.

Thank you for your assistance in this matter.

Yours truly,

JAT/sdj

John A. Thomas

Enclosures

cc: Mr. Rick Toth (w/enclosure)

Certificate of Mailing Under 37 C.F.R. § 1.8

I, John A. Thomas, hereby certify that this correspondence for Serial No. 09/259,000 is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: BOX; NO FEE, Assistant Commissioner for Patents, Washington, D.C. 20231, on the date indicated below:

Date: 8/8/02

Signature: John A. Thomas

**In re Application of:**

**Serial No.: 09/259,000**

**Filed: February 26, 1999**

## For: SINGLE CAMERA VIDEO INSPECTION SYSTEM FOR WATER WELLS AND BORE HOLES

**§ Group Art Unit: 2713**

§ **Examiner: Gims S. Philippe**

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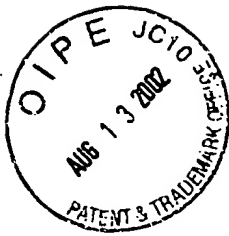
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**APPELLANT'S**

## REPLY TO THE EXAMINER'S ANSWER

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## APPELLANT'S REPLY TO THE EXAMINER'S ANSWER

Appellant respectfully replies to the Examiner's Answer filed on June 28, 2002.

For the reasons stated below, Appellant continues to urge the allowance of all claims in issue.

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### Issue 1

Whether claims 1-4, 9, 18, 19, and 23-25 are patentable under 35 U.S.C. § 103 over *Federau* (U.S. Patent 4,532,544).

The Examiner's Answer repeats the arguments advanced in the final rejection. The Examiner still has not made a prima facie case of obviousness on the reference cited (*Federau*, No. 4,532,544).

First, the prior-art reference cited does not teach all the claim limitations. In particular:

- *Federau* does not disclose the image sensor claimed. Appellant's sensor is a camera that captures a complete image. The "line sensor" of *Federau* is a line of photo-sensitive light detectors that are rotated about an axis parallel to that of a borehole to build up an array of scan lines.
- Appellant's claim 1 requires first and second image sensors, or cameras. The Examiner incorrectly interprets the photo-detectors in *Federau* line sensor as all being "image sensors," in the sense of a camera, and then argues that any combination of two of these photo-detector elements is equivalent to Applicant's two camera image-sensors.

- Appellant's claim 1 also requires the first image sensor to acquire an image in a first direction along an axis, and the second image sensor to acquire an image in a second direction essentially perpendicular to the first. The limitation is not present in the reference. The Examiner's Answer (p. 4) cites *Federau*, Fig. 1, items 41 and 23 and col. 4, lines 2-13, as showing first and second image sensors acquiring images in perpendicular directions. This construction simply cannot be wrung out of *Federau*. Item 41 is a rotating "camera head" that carries and rotates the line (23) of individual sensors (photo-detectors), items 27. The sensors in *Federau* are acquiring an image inside a borehole in one direction only: perpendicular to the wall of the borehole.

Secondly, the Examiner has cited no teaching or suggestion that *Federau* could be modified to combine the "sensor elements" into an array such as a typical CCD camera and place this array into a television camera, as Appellant does. In fact, *Federau* teaches away from this suggestion. See, e.g., *Federau*, col. 1, lines 50-68, and col. 2, lines 1-6.

Finally, there is no suggestion of the desirability of the claimed invention, either in *Federau* or any other art cited by the Examiner. As stated above, *Federau* teaches away from Appellant's design, stating that scanning systems other than his have serious disadvantages.

Thus all of the requirements for a prima facie case of obviousness are missing. All must be present or the case has not been made. MPEP § 2143.

## Issue 2

Whether claims 5-8 and 26-33 are patentable under 35 U.S.C. § 103 over *Federau* in view of *Barbour* (U.S. Patent 5,652,617), and further in view of *Berman, et al* (U.S. Patent 5,528, 453).


As argued before, the dependent claims in this group are all dependent on claims allowable as argued with respect to Issue 1. The single independent claim, claim 29, contains a limitation not found in the art cited; this being a single camera operable to capture an image in a first and second directions. Once more, the Examiner's argument attempts to extract from *Federau* more than it will yield. Inspection of Fig. 1 of *Federau* makes it plain that the *Federau* system captures an image in only one direction: toward the surface of the borehole, which is perpendicular to the axis of the hole.

### **Conclusion**

For the reasons stated, Applicant respectfully contends that each claim is patentable and solicits the reversal of all rejections.

Respectfully Submitted,

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Date: 8/8/02

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